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ABSTRACT

Classroom processes dealing with both cognitive and socioemotional factors are studied to investigate the relationship of teacher threat behaviors to the academic achievement of educationally disadvantaged children. The specific objective is to supply evidence relating academic achievement to a positive socioemotional climate. It is hypothesized that classes with low threat socioemotional climates will achieve more than classes with high threat climates. A systematic observational instrument is developed to identify classroom behaviors on a bidimensional scale; that of threat (teacher aversive stimuli) and content (on-task activities). Initial results indicate no support for the hypothesis that threat is detrimental to learning; however, subsequent testing using a clearer distinction of high and low threat classroom indicates a significant relationship. A negative relationship between amount of content presentation and quality of teacher threat behavior is found. A teacher threat behavior increases, the quantity of content presentation decreases. Further research to determine the extent of the effect of various levels of threat on educationally disadvantaged minorities is suggested. Implications for the classroom suggests a need for greater awareness on the teacher's part that disadvantaged children can only achieve at a satisfactory academic level if they are provided sufficient opportunity to learn the materials at hand. (Author/AM)

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# RELATING TEACHER THREAT TO ACADEMIC ACHIEVEMENT IN EDUCATIONALLY DEPRIVED CHILDREN

by

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UD 016 032

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## ABSTRACT

The purpose of this study was to investigate the relationship of teacher Threat behaviors to the academic achievement of educationally disadvantaged children. Classroom processes dealing with both cognitive and socio-emotional factors were studied. The specific objective was to supply evidence relating academic achievement to a positive socio-emotional climate.

It was hypothesized that classes with low Threat socio-emotional climates would achieve more than classes with high Threat climates. The study was carried out at 12 schools in Polk County, Florida. Children were selected on the basis of their economically disadvantaged background and their low score on the Metropolitan Readiness Test. Activities centered around the Alpha One Reading Program which is a moderately structured, linguistic, game-like approach for learning to read.

A systematic observational instrument was developed to identify and classify classroom behaviors on a bi-demensional scale. The two dimensions were "Threat" (teacher aversive stimuli) and "Content" (on-task activities). Classroom behaviors were observed in terms of both of these factors. Five observations of 20 minutes each were made by trained observers for each of the 12 classrooms over a three-month period. The Metropolitan Readiness Test was used as the pretest and the Metropolitan Achievement Test was administered as the posttest. Analysis of covariance was carried out using the pretest as a covariate and post-hoc multiple comparisons were made using Duncan's Multiple Range Test. Initial results indicated no support for the hypothesis that Threat is detrimental to learning, however, subsequent testing using a clearer distinction of High and Low Threat classrooms indicated a significant relationship.

Further research was suggested to determine the extent of the effect of various levels of Threat upon educationally disadvantaged ethnic minorities. Additionally, research is needed to determine the effect of various levels of Threat upon student self-concept in programs less strenuous than the Berieter-Engleman "pressure cooker" but more demanding than the program observed in this study. Implications for the classroom suggests a need for greater awareness on the teacher's part that disadvantaged children can only achieve at a satisfactory academic level if they are provided sufficient opportunity to learn the materials at hand. This can only occur if a relatively high level of on-task activities is maintained. However, as this study points up, there is a negative relationship between amount of Content presentation and quantity of teacher Threat behavior. As teacher Threat behavior increases, the quantity of Content presentation decreases.

# INTRODUCTION

## Statement of the Problem

There are a limited number of research studies which may be considered important from the standpoint of their effect on bringing about change in teacher education or instructional techniques (Travers, 1973). This situation becomes all too evident when a majority of the authors commissioned to contribute to the Second Handbook of Research on Teaching expressed disappointment over the lack of substantive research in the area of teacher effectiveness. Clifford (1973) has suggested that it is impossible to establish meaningful relationships in teacher effectiveness based upon the "patchwork" of unrelated research currently available.

Since the passage of the 1965 Elementary and Secondary Education Act (ESEA), this lack of meaningful research has been especially apparent in the areas dealing with instructional theories to guide teachers working with the educationally disadvantaged child.

New approaches to teacher training have been a crucial aspect of the compensatory education movement. Most of the efforts to modify teacher training programs are variations of a five-point program suggested by Riessman (1967). These include: (1) changing teacher attitudes; (2) extensive pre-teaching experiences; (3) an understanding of management and motivational techniques specific to disadvantaged children; (4) the utilization of innovative educational technology in curriculum, methods, and materials, and (5) a concern with the art of teaching so as to utilize the potential of each teacher.

In addition, the amount of relevant research in teacher effectiveness relating process to outcome--when dealing with disadvantaged children--is woefully limited. There are virtually no studies which attempt to relate process to product, dealing with the interaction of cognitive and affective elements. Only by linking these processes to product can teacher effectiveness be defined and that definition subsequently applied to the development of instructional axioms for teaching the educationally disadvantaged. In order to link process to product there must be a systematic method of recording classroom happenings which appear to have relevance for the study of these meaningful interactions, and subsequently there must be measures of outcome which are valid estimators of the degrees of change in the attributes measured.

The purpose of this study was to investigate certain interactions between cognitive and affective processes in classrooms for educationally disadvantaged children and to relate these interactive processes to cognitive outcome, i.e., academic achievement. The specific objective for this study was to supply evidence that educationally disadvantaged children learn more when the socio-emotional climate in the classroom is non-threatening.

## Locale

The present study was carried out within the contextual setting of the Polk County, Florida, School System Compensatory Program for the school year 1973-1974. The Compensatory Program had three main objectives: (1) to provide a multi-sensory beginning reading program (Alpha One), (2) to provide a program in mathematics that would include manipulative, exploratory and game-like materials, and (3) to provide a low (15:1) pupil-adult ratio.

## Hypothesis

Two basic conditions are required for learning (Whithall, 1949; Flanders, 1965; Ober, 1971): (1) a positive socio-emotional climate, in which the student feels comfortable and is motivated to learn, must exist, and (2) the teacher must provide learning opportunities that will allow students to have access to criterion materials to be learned.

Using the above conditions as basic assumptions and expanding on the work of Flanders (1965), the following conceptual framework is established for developing the hypothesis: The development of a comfortable and non-threatening environment is considered

a prerequisite to learning and it would, therefore, appear that in those classes in which the teacher uses sarcasm, criticism or threats to the greatest degree, the least amount of learning will occur. In addition, given a non-threatening climate, the greatest amount of learning should occur in those classrooms where the teacher provides the greatest amount of learning opportunity through a high level of content presentation (Berieter and Engleman, 1966; Rosenshine and Furst, 1971).

The working hypothesis is then stated thus: Students in classrooms where teachers manifest the least amount of Threat behavior will show greater academic achievement than those in classrooms where teachers manifest more threatening behavior.

### Independent Variables

The independent variables are (1) Teacher Threat and (2) Content. These terms are operationally defined in the Methodology section. Based upon these variables, each observed unit of teacher-pupil behavior may be categorized within one of the following divisions: (1) Threat/Content, (2) Threat/Non-Content, (3) Non-Threat/Content, and (4) None-Threat/Non-Content.

### Limitations

Pupil assignment and selection were non-random and there was no manipulation or control of the independent variables. That is to say, voluntarily assigned, regularly employed teachers, who were not specifically trained to enact particular patterns of behavior were used. Teachers were observed in the natural setting of the classroom and were then assigned to a particular "treatment group" based upon these classroom observations.

Other confounding factors include: the use of different schools, different classroom settings, different aides and an extremely long period of time from pre-test to post-test (a full school year) -- although observations of the teachers involved were carried out within a three-month period between February and April.

Another difficulty in attempting to obtain representativeness of sample behavior of teachers is the potential influence of the observer. Teacher behavior in the presence of an observer may or may not be similar to that which occurs when the observer is not present -- depending upon the influence of each observer. Limited research (Rosenshine and Furst, 1973) indicates that there is a difference in behavior between that observed when an observer is in the classroom, and that observed when the teacher is unaware of the observation.

## REVIEW OF THE LITERATURE

The summarization of correlational studies by Rosenshine and Furst (1971) shows that there are certain teacher variables which are related to pupil academic achievement and these variables have been studied in the classroom using systematic observation techniques. In addition, a review of studies dealing with the educationally disadvantaged points up the pressing nature of the task of developing instructional axioms which can help to erase the stigma of educational retardation. The question asked is: which philosophy and which curricular strategies can best provide guidelines for a truly compensatory educational program?

Observation systems dealing with content have not had such a lengthy or well-documented history as those dealing with socio-emotional climate. Product evaluation has been more clear-cut and readily available in the cognitive area, and student achievement, whether it be indicated by a final examination, a mid-term quiz, or a standardized test, has been used to provide feedback for curricular and instructional changes. It has been considerably more difficult to determine how social interaction affects academic achievement and therefore much of the effort in developing observation systems has gone into the affective domain.

Some social psychologists interested in classroom behavior have explored the social climate aspects of the classroom. In the late 1930's, one of the classic studies in social climate was carried out by H. H. Anderson (1939). In this study Anderson

assessed the integrative and dominative behaviors of teachers in their contacts with children. Dominative behavior, as defined by Anderson, consisted of the use of force, commands, threats, shame, blame and attacks against the personal status of the individual. Integrative behavior, on the other hand, was defined as being consistent with the concepts of growth and learning, making allowance in one's behavior for differences in others. Anderson describes this behavior as flexible, adaptive, objective and scientific. He concluded that the dominative behaviors of teachers tended to stifle the spontaniety of the children. The study was descriptive in nature and there was no attempt to relate academic achievement to the two kinds of teacher behavior.

Lewin, Lippitt and White (1939) performed a series of experiments in controlled settings on the effects of democratic and autocratic adult leadership upon work and play habits of groups of children. Although the setting of the studies was somewhat removed from that of a classroom, the working hypotheses dealing with the autocratic-democratic dichotomy were basically the same as found in Anderson's dominative-integrative paradigms. Findings from these studies corroborated conclusions reached by Anderson, that dominant leadership tended to depress spontaneous activity on the part of the children, but additional findings indicated that autocratic styles of leadership could also elicit such behavior as apathy or aggression.

John Withall (1949) was one of the first of the early researchers of classroom climate to measure classroom interaction by means of an observational system that classified teacher verbal behavior by category. Withall's studies were in the vein of Anderson (1939) and Lewin et al (1939), and findings of this study provided evidence that dominating teaching styles were not conducive to academic growth.

The Flanders observational system of interaction analysis was developed and refined about 1957, and was followed by a series of experimental and correlational studies by Flanders and his associates (Flanders, 1960; Flanders, 1964; Flanders, 1965; Flanders, 1969). Flanders developed a simple 10-category system to use in the study of teacher and pupil behavior as it pertains to classroom climate. Although he used the terms "direct" and "indirect" behavior to describe teacher actions in the classroom, the operational definitions of this dichotomy closely parellel those of previous researchers in the dominative/integrative vein.

As pointed out by Rosenshine and Furst (1971) there has been a consistent positive correlation between integrative (indirect) teacher behavior and pupil academic achievement, but the studies cited by these authors did not indicate that this consistent positive relationship was statistically significant. However, Flanders (1965) found that the relationship between teacher "indirectness" and the academic achievement of pupils was statistically significant. In the Flanders' studies the indirect/direct dichotomy did not sufficiently separate such content-related behavior as: teacher lecture, demonstration, drill and content-oriented direction-giving from such threatening behaviors as criticizing, punishing, sarcasm and other aversive stimuli. It is therefore difficult to separate the threat patterns from the cognitive/content patterns using the Flanders system.

Throughout the span of research on classroom climate from Withall (1949) to Ober (1971) the same postulate has been made: learning is likely to occur when classroom experiences are both meaningful to the learner, and non-threatening to the learner. In spite of this postulate, none of the studies mentioned have specifically identified and operationally defined an observed category of teacher behavior as "Threat."

Rosenshine and Furst (1971) have identified several studies where "criticism" was the teacher variable observed and in these studies significant negative correlations with student achievement were obtained. However, criticism is only one aspect of teacher behavior which may be threatening and deleterious to the socio-emotional climate. Hough (1967) reviews previous research on socio-emotional climate in terms of operant behavioral theory, defining criticism, sarcasm and justification of teacher authority as aversive stimuli. Although these classifications of behavior may be subsumed within the dimension of threat, they would not appear to be totally inclusive and exhaustive of that dimension. Hough points out that the research to date shows strong support for the hypothesis that classrooms with smaller percentages of aversive stimulation would have greater achievement. Hough concluded, however, that this hypothesis has not yet been thoroughly tested by empirical research.

The Educationally Disadvantaged. Within the past 25 years attention has focused increasingly upon the educationally disadvantaged children, spotlighting their scanty experience with formal language, ignorance of school culture and concomitant poor academic achievement. Numerous reports indicate that IQ scores are lower for disadvantaged children and their attitudes are negative (Becker, 1952; Clark, 1962; Jensen, 1969).

Generally schools and teachers have expected less from disadvantaged children and have thereby aimed at "enrichment" programs or "wholistic" programs which take the stress off of the basic curriculum dealing with reading and math and put more emphasis on music, art, field trips and physical education. Reissman (1965) argues, on the other hand, that disadvantaged children have been underestimated and there needs to be a shift in attitude to: "...expect more -- get more." (Reissman, 1965, p.16).

In summary, the history of correlational studies relating classroom process to product has generally required the use of some observational system in order to record classroom interactions. These systems have been used to a much greater extent in studies dealing with socio-emotional climate than those dealing with cognitive matters.

Only since 1965 have studies dealing with disadvantaged children become one of the major thrusts in educational research and there is as yet no solid empirical basis upon which to build instructional axioms for the disadvantaged. Various strategies have been used in developing programs for the disadvantaged from highly structured, accelerated programs such as that of Berieter and Engleman (1966) to the Montessori approach, which gives considerable freedom of action and choice to the child. Some approaches, including those of the child development and enrichment variety, stress social and psychological adjustment of the child, while others, such as Kamii (1972) and Lavatelli (1970) suggest a more even balance between psycho-social and cognitive growth.

The Polk County, Florida, Compensatory Program was not designed to adhere to any of the philosophies discussed above. However, the combination of moderate structure for both teacher and pupils, the game-like approach to the Alpha One Reading Program, and the stress on "failure-free" activities, would probably place it in the Kamii (1972) vein of Piegetian thought.

## METHODOLOGY

A systematic observation instrument was used to identify and classify the independent variables. This instrument is called the Climate-Content Observational System (CCOS) and is a category system consisting of four categories dealing with the two variables: Threat and Content. The categories are operationally defined as follows:

Threat is defined as any behavior on the part of the teacher which is punishing, threatening, tension-producing, harshly self-justifying, ridiculing, sarcastic or tends to discomfort one or more of the pupils in the classroom. The teacher behavior must carry with it the threat of actual or implied, immediate or delayed, presentation of an aversive stimulus. The aversive stimulus may be primary, such as corporal punishment or extreme verbal abuse, or it may be of a higher order, such as withholding privileges, ridicule, sarcasm, isolation, etc.

Non-Threat is defined as any teacher behavior which does not fall into one of the classifications of Threat behavior. A basic assumption made here, in order to be able to record student behavior within the context of the Threat-Content framework, is that all but an insignificant proportion of student behavior will fall within the Non-Threat category. Therefore, generally when student talk is being recorded (or other student behaviors) the important consideration is whether the activity is Content or Non-Content oriented.

Content is defined as any classroom behavior or activity in which a majority of the class is actively engaged in academic/cognitive related matters. This includes cognitive/content related teacher talk, demonstration, lecture, questions, responses, drill, clarifications, and content-related reinforcement. Pupil activity or behavior directly related to the subject matter at hand such as responses, questions, self-initiated talk, blackboard work, content-oriented desk activities, or attending to content-oriented teacher behavior.

Non-Content behaviors or activities include all behaviors and activities which cannot be classified within the Content category. Such behaviors include confusion, administrative activities, non-cognitive silence, disciplinary matters, non-academic direction-giving, teacher self-justification, teacher or pupil talk not related to the academic matters at hand and Non-Content playing, singing or dancing.

Ground Rules

A. Observers were trained in the system prior to making actual observations in the classroom. An interobserver reliability coefficient of 0.85 was required to be attained by a newly trained observer prior to that observer making actual observations.

B. Observers maintained an unobtrusive position in the classroom where the teacher and all pupils could be observed. Upon entering the classroom the observer would wait at least 10 minutes prior to making any observation so that teacher and class could become habituated to the observer's presence.

C. Every three seconds, during the observation period, the observer classified the behavior occurring in the preceding three seconds, identifying the category of behavior as one of the following:

(1) Non-Threat - Content (NTC)

(2) Threat - Content (TC)

(3) Non-Threat - Non-Content (NTNC)

(4) Threat - Non-Content (TNC)

D. The observer first looked for the Threat factor based upon teacher behavior and then determined the Content factor based upon the majority of class activity or behavior.

E. If the teacher was engaged in Threat behavior and a pupil or pupils were responding in such a fashion as to maintain or heighten the Threat condition, the assumption about pupil behavior being Non-Threat was overridden and the Threat category was recorded for the pupil behaviors.

The Independent Variables. Each of the 12 classes observed were assigned to levels of the two independent variables, Threat and Content, based upon the results of classroom observation using the CCOS. Classes were first assigned as to level of Threat (High or Low) based upon the Threat Density. Threat Density is defined as the ratio of time recorded for Threat situations to total time of observed classroom activity,

$$\text{Threat Density} = \frac{\text{Total Threat Time (all observations)}}{\text{Total Time (all observations)}}$$

The 12 classes were thus divided into two groups: the High Threat group being selected from the 6 classes with the highest Threat Density and the Low Threat group being selected from the 6 classes with the lowest Threat Density.

The High Threat and Low Threat groups were then each divided into High Content and Low Content categories based upon the Content Density of the individual classes. Content Density is defined as the ratio or time recorded for Content activities to total time of observed classroom activity.

The Dependent Variable. The Metropolitan Achievement Test (Durost et al, 1971) was used as the measure of academic achievement. The validity of the MAT was considered in terms of content, reflecting a sampling of the curriculum which was being evaluated. Because of the use of this instrument in Polk County as the assessment instrument in the county-wide testing program, the content validity was considered adequate for the research at hand.

The Cognitive Covariate. In the cognitive domain the Metropolitan Readiness Test (Hildreth et al, 1964) was administered in the Fall of the school year and subsequently used as a covariate for the cognitive dependent measure.

Pupil Sample. Characteristics of the pupil sample indicate that all were from low income families and were participating in the Federal School Lunch Program. All but two were between six and seven years of age, and all had scored in one of the bottom three stanines on the MRT. Ethnic composition of the classes ran from 0% to 100% Black. Three classes were 100% Black and two were 100% White.

Sampling of Teacher/Pupil Behavior. Sampling of observed teacher/pupil behavior for the five periods of observation was carried out within the limits of the field conditions encountered. The schedule of observations was such that, whenever possible, observers alternated observations for each classroom. Ground rules established for the observations were:

(1) Observers were to receive advance permission.

(2) All observations were to be made in the A.M.

(3) Observations were made only when the teacher was engaged in working with the whole class on the Alpha Reading Program.

(4) Any two observations of the same classroom must have been at least one week apart for different observers and at least two weeks apart for the same observer.

Testing the Hypothesis. In order to test the hypothesis the analysis of covariance was used. A 2 X 2 factorial design was developed consisting of two levels of Threat (High/Low) and two levels of Content (High/Low). This 2 X 2 analysis of covariance for testing the hypothesis was carried out using a computer (Fortran) subprogram: BMD03V (Analysis of Covariance--revised January 29, 1970, designed at the Health Sciences Computing Facility, UCLA).

Unequal numbers of pupils were encountered since originally classes differed in enrollment from 14 to 20 and during the school year there were more losses due to transfer. Other losses occurred when some pupils were found to have not taken the MRT. Edwards (1968) points out that, if the cell with the smallest number is still judged to be adequate (in sample size), observations from other cells may be discarded at random, in order to make the number of observations for all treatment cells equal to those for the treatment with the smallest number (p. 263). After assigning classes to treatment groups it was necessary to randomly discard 2, 4 and 5 observations from the cells with larger numbers in order to develop equal number of observations in all cells. This provided a sample size of 38 observations per cell. The discards were selected using a table of random numbers (Edwards, 1968, pp. 391-393).

Multiple comparisons of treatment means were made subsequent to the initial analysis using Duncan's Multiple Range Test (Edwards, 1968).

## RESULTS

Classes were assigned to levels of the two factors, Threat and Content, based upon the results of the classroom observations using the CCOS. Table 1 indicates assignments to levels of Threat and Content based upon Threat and Content Density, and shows the mean Density for each level of the independent variables.

Using the MRT as the covariate, adjusted mean scores were obtained as was an adjusted standard error term (Table 2). In Table 1, each class has been identified by both level of Threat and level of Content and therefore the adjusted mean score for each class contributes to only one interaction cell. Figure 1 shows the adjusted mean achievement scores for each of these interaction cells.

The Hypothesis states that classrooms with a Low Threat socio-emotional climate will achieve at a higher level than classes with a High Threat climate. Academic achievement, as measured by the Metropolitan Achievement Test administered in the Spring, was compared between the six classrooms with the highest Threat Density and the six classrooms with the lowest Threat Density. The Metropolitan Readiness Test administered in the Fall of the school year, was used as a covariate. The results of the analysis of covariance is shown in Table 3.

The ANCOVA comparing the High Threat classes against the Low Threat classes provided an F ratio of 2.37 with 1 and 147 degrees of freedom. An F value of 2.37 does not obtain significance at the .05 level, therefore the outcome of this initial analysis did not support the Hypothesis.

That is, no significant difference was found in academic achievement between classes with a High Threat Density and those with a Low Threat Density.

As a test to determine if greater separation in amount of Threat Density would lead to a significant negative relationship between academic achievement and Threat, tests were conducted using only the three highest Threat Density classes and the three lowest Threat Density classes. Table 4 shows the results of these tests. Two tests were conducted, one using the means of the MAT scores unadjusted for the covariate (MRT); the other test was carried out using the adjusted MAT score means and the adjusted error term. In both cases, a significant difference was obtained. It would appear that there is a point where a clear enough distinction can be made between High Threat and Low Threat classes to obtain a significant relationship between the two variables in question.

Table 1

Assignment of Classrooms to Threat and Content Cells, and Mean Threat and Mean Content Density for Each Cell

| High Threat | | Low Threat | |
|---|---|---|---|
| High Content | Low Content | High Content | Low Content |
| Classes: A,E,I | Classes: B,G,H | Classes: J,K,L | Classes: C,D,F |
| Mean Threat 0.076 | Mean Threat 0.097 | Mean Threat 0.034 | Mean Threat 0.035 |
| Mean Content 0.920 | Mean Content 0.857 | Mean Content 0.920 | Mean Content 0.826 |

Table 2

Table of Raw Score Means, Adjusted Means and Adjusted Standard Errors. Based Upon Results of the Metropolitan Achievement Tests as Adjusted by the Covariate (MRT)

| Class | Mean | Adjusted Mean | Adjusted Standard Error |
|---|---|---|---|
| A | 31.50 | 30.55 | 1.70 |
| B | 18.20 | 17.50 | 3.03 |
| C | 26.83 | 24.86 | 1.62 |
| D | 28.88 | 24.91 | 2.48 |
| E | 43.54 | 44.96 | 2.05 |
| F | 21.17 | 26.54 | 2.13 |
| G | 25.54 | 24.28 | 1.89 |
| H | 30.35 | 20.52 | 1.51 |
| I | 23.18 | 23.31 | 2.04 |
| J | 44.92 | 43.46 | 1.89 |
| K | 41.18 | 42.65 | 2.06 |
| L | 28.79 | 30.25 | 1.82 |

Table 3

Analysis of Covariance Table for the 2 X 2 Factorial Design with Two Levels of Threat (High and Low) and Two Levels of Content (High and Low). Dependent Measure: MAT. Covariate: MRT.

| Source of Variation | Sum of Squares | df | Mean Square | F | probability |
|---|---|---|---|---|---|
| Threat | 182.883 | 1 | 182.883 | 2.37 | n.s. |
| Content | 3355.301 | 1 | 3355.301 | 43.53* | .001 |
| Threat X Content | 465.180 | 1 | 465.180 | 6.03* | .025 |
| Error | 11331.551 | 147 | 77.085 | | |

Table 4

t Tests Comparing Outcomes on the MAT for Three Highest Threat Classes against Three Lowest Threat Classes

| Classes | MAT Mean Score | MAT Adjusted Mean Score | Threat Density |
|---|---|---|---|
| B | 18.20 | 17.50 | .098 |
| G | 25.54 | 24.28 | .108 |
| H | 30.35 | 20.52 | .084 |
| HT Group Mean: | 24.33 | 20.77 | .095 |
| F | 21.17 | 26.54 | .019 |
| J | 44.92 | 43.46 | .007 |
| L | 28.79 | 30.25 | .014 |
| LT Group Mean: | 31.67 | 33.42 | .024 |
| $SE_{diff.}$ = | 3.08 | 2.37 | |

$$t = \frac{24.33 - 31.67}{3.08} = -2.38^{*}$$

$$t_{adj.} = \frac{20.77 - 33.42}{2.37} = -5.34^{**}$$

* significant at alpha = 0.025
** significant at alpha = 0.01

## DISCUSSION

There is the possibility that Threat may not be negatively related to academic achievement as long as the appropriate cognitive climate is provided. The evidence is clear that the Content factor did confound the comparison of High Threat and Low Threat classrooms. This confounding is also evident from the significant interaction between these two variables (Table 3).

Were the types and intensities of Threat used in the High Content classes different from those used in the Low Content classes? Was the difference between the High and Low Threat classrooms only the amount of time spent in Threat behavior on the part of the teacher, or was there a difference in kind and intensity of Threat behavior?

Are there types of Threat which do not damage the socio-emotional climate and, if so, are there certain intensities or frequencies which can be maintained without a diminution of learning? When dealing with the disadvantaged, the problem of discipline is magnified. A teacher, who is flexible or adaptable, who can use Threat when necessary to maintain the class decorum, may be observed as a "threatening" teacher while she still proceeds to carry out the business of teaching Content. Only through experimental techniques, including randomization of pupils, would it be possible to answer the questions presented above, since each, by implication, suggests some degree of causality. The difficulty with interpreting ex post facto designs is that other questions arise which cannot be answered without the control obtained in experimental paradigms. Without randomization of pupils, even statistical adjustment for prior ability cannot assure that other factors are not at work in bringing about the actual results obtained. Take, for example, the biases which were built into the selection of the "samples" chosen. Using the two extreme Threat Groups of three classes each, some interesting comparisons can be made using certain background variables. Table 5 shows these comparisons. As can be seen in this table, 88 percent of the High Threat classes were Black pupils compared to only 29 percent in the Low Threat classes. Then, too, the High Threat classes not only contained more boys, but also, on the average, two more pupils per class than the Low Threat classes.

Table 5 also shows that the teachers in the High Threat classes scored lower on a teacher attitude scale which measures the teacher's attitude concerning the importance of the child's psycho-social development (Hall, 1972). A lower score indicates the teacher places less emphasis on psycho-social development. This attitude inventory was administered at the beginning of the school year. A Spearman rank order correlation was computed, ranking all 12 classes on the variables of Threat Density, teacher attitude and percentage of minority students. The results of this matrix is presented in Table 6. It can be seen that there is a significant negative correlation between Threat Density and teacher attitude, that is, teachers who show higher Threat behavior stressed psycho-social development less. (As would be expected from the previous two relationships, teachers who have the higher percentages of Black students show greater amounts of Threat behavior.)

The presentation of these data raises even more questions as to the interpretation of the results concerning the initial hypothesis: that High Threat classes achieve less.

The results indicated in Table 5 and Table 6 might lead to certain interpretations which have been voiced by other authors. One of these implications may be that white middle-class teachers have different expectations of the educationally disadvantaged minority children (Smith, 1969; Rosenthal and Jacobsen, 1968; Riessman, 1967). Another implication, previously cited by other authors, is that black disadvantaged students are more unruly and more prone to be discipline problems than white students (Clark, 1962; Sexton, 1961). Considering the sample used in this study, it would be difficult to make any causal interpretations about the results pertaining to this hypothesis.

Children in classrooms where the academic subject matter was stressed, that is, where the Content Density was higher, showed greater academic achievement (Table 3). A cogent argument to support this conclusion is found by analyzing the achievement of the minority students for both the High Content classes and the Low Content classes. Minority students in High Content classes scored significantly higher than those in Low Content classes (alpha = .05).

Table 5

Some Background Variables for the Three Extreme High Threat Classes Compared to Those of the Three Extreme Low Threat Classes.

| Threat Category | Classes | % Black Pupils | % Boys | Average Class Size | Teacher Attitude |
|---|---|---|---|---|---|
| HIGH | B,G,H | 88 | 74 | 19 | 170 |
| LOW | F,J,L | 29 | 60 | 17 | 201 |

Table .6

Spearman Rank Order Correlations Among the Three Variables: Threat Density, Teacher Attitudes and Percent Minority Students

| | | | | |
|---|---|---|---|---|
| A. | Threat Density | 1.00 | - .59* | .54* |
| B. | Teacher Attitude | | 1.00 | - .61* |
| C. | Percent Minority | | | 1.00 |

*Significant at alpha = .05.

Experiments in operant conditioning and verbal learning have shown learning occurs when subjects can attend to the task at hand and there are a sufficient number of trials. It has been difficult to relate this process to outcome in the classroom because of the many variables tolerated in school settings. However, Rosenshine and Furst (1971) accumulation of correlational studies provides considerable evidence that children must be given the appropriate exposure to the materials to be learned and the teacher must structure the materials in a way which makes those materials assimilable.

In developing an interpretation based upon the results of this study it is necessary to review certain relationships. Tables 5 and 6 provide information on the relationship among certain background variables and the observed Threat Density in the classroom. Table 4 also shows that there was a significant difference in achievement between the three lowest Threat classes and the three highest Threat classes. In considering these results there is strong evidence to indicate that one of the uncontrolled variables which related negatively to achievement was the percent minority pupils, i.e., the higher the percentage of minority pupils, the lower the academic achievment. A rank order correlation between percent minority students and academic achievementproduced a significant rho ($r = -0.55$).

Not only were the classes with the highest percentage of Black students the classes where the greatest teacher Threat behavior was manifested, but also these were the classes that scored lowest on the MAT. These results are also consistent with previously cited studies indicating that disadvantaged minority students not only begin school behind White middle-class students (educationally) but progressively fall further behind (Jensen, 1969; Cloward and Jones, 1963). And, as this study points out, minority disadvantaged even appear to fall behind their equally (educationally) disadvantaged White counterparts.

Although this confounding variable (percent minority students) makes interpretation of the Content variable tenuous, one thing remains clear: in classrooms where Content matter can be dealt with more frequently, children achieve more than in those classrooms where Content matter is dealt with less frequently. Does this condition relate to Riessman's axiom: "..expect less--get less." (1967)? If this is the case, in this study at least, it would appear that expectancies concerning minority students are group (classroom) specific rather than individual specific. Analysis of individual black student achievement scores, in classrooms with over 40 percent white students, indicated that their scores did not differ significantly from their classmates.

The interaction observed in the analyses (Table 3) would appear to even more firmly support the assumption with regard to the opportunity to learn the criterion materials. The significant interaction between the Threat and Content factors would also appear to support the premise that the perception-cognition-retention chain of events must occur before any learning can take place and even with certain levels of aversive stimulation (Threat), most organisms can learn to some degree. However, it would appear both conditions, Content and lack of Threat, are positively related to optimum learning.

## CONCLUSION

Although the hypothesis was not supported by the initial analysis it is concluded that enough evidence was obtained to determine that Threat is negatively related to academic achievement when the Threat levels of the groups compared can be distinctly separated. These results are considered supportive, to some extent, of: the Flanders (1965) conclusions concerning the positive relationship between indirect teacher behavior and academic achievement; Hough's (1967) model of operant behavior in which greater aversive stimuli lead to less achievement; and the Rosenshine and Furst (1971) correlational studies showing (1) a positive relationship between indirect teacher behavior and achievement and (2) a negative relationship between teacher criticism and academic achievement.

In addition, there was also strong support for the conclusion that academic achievement is directly related to the amount of time devoted to the criterion material (Content). These results are supportive of the Berieter and Engleman (1966) studies which concluded that more intensive presentations of cognitive material leads to higher academic achievement and this evidence may be considered an extension of the Berieter-Engleman work into a less structured environment. The results are also compatible with the Wylie-Harnischfeger (1974) model which builds a strong case for the positive relationship between amount of schooling and academic achievement.

The levels of the variable, Content, relate differently across the levels of the Threat variable. Since it can be shown that academic achievement correlates significantly and negatively with percent of minority pupils in the classroom, it is also evident that this variable, percent minority pupils, also relates differently across the levels of Threat.

## Implications For Further Study

Research Limitations in the Field. The limitations pointed up in this study are the same limitations that most researchers in the field of education must face. Too often the restraints placed upon the researcher make it impossible to develop a model which resembles an experimental paradigm. One of the basic implications for further research is that good research, meaningful research and research which can make a difference, must be planned well in advance and receive the full cooperation and support from all educational agencies, from the U. S. Office of Education to the classroom teacher.

Threat and Content: The Interaction. The conditions for cognitive and psychosocial growth are inextricably joined in the classroom and yet when attempts have been made to relate produce to process the interaction between these two conditions is seldom taken into account. The primary implication of this study is that the development and refinement of instructional strategies must consider both dimensions: thinking and feeling, not separately, but as an interactive dual element of the learning process. In developing further research on teaching, these elements must be precisely controlled to assure that the interaction does not mask the main effect--and the interaction must be examined at various levels of each of these variables.

Threat and Academic Achievement. As was shown in this study, a simple division of classes, by total amount of time spent in teacher Threat across the observation periods, was not discriminating enough to show the relationship between Threat and academic achievement clearly. A further division into the three highest Threat classes and the three lowest did produce the hypothesized results. New investigations must now be conducted in the following areas along this line:

(1) A comparison of the effects of various levels of Threat on minority disadvantaged students and on white disadvantaged students. Because of the very high (negative) correlation between percent minority students and academic achievement, and the probability of differing regression slopes between the dependent measure and a concomitant ability measure it is suggested that a Treatment X Blocks design would be appropriate. Or, "Percent Minority Students" could be one of the independent variables to be investigated. The various levels of Threat could also be further subdivided into at least three categories: High--Medium--Low.

(2) Using basically the same design as in (1), the global Threat factor should be further refined. Some research has already been done showing the negative relationship between criticism and achievement. Other Threat factors which may be investigated include : physical punishment, individual vs group Threat, and failure to reinforce.

(3) Teacher attitude must be further investigated. Using instruments such as Hall's (1972) scale which measures teachers' emphasis or psycho-social development, an extension of the Threat-Attitude relationship, pointed up in this study, and their effect on academic achievement should be further investigated.

Implications for the Classroom. The findings of this study would seem to indicate that teachers of disadvantaged children must learn to maintain a pace that will keep the children busy with the academic tasks at hand while developing a technique of control which does not consist of continuous Threat, since time spent in discipline is generally lost for cognitive growth. This may be especially true in classes with high percentages of Blacks.

White middle-class teachers are not generally prepared to deal with the cultural disparity of what seems to be important to a six-year-old. Where the white middle-class child has been conditioned to attend to academic learning tasks, most black disadvantaged youth have not. The unprepared teacher uses the tools she has to maintain control over her unruly, inattentive class -- and the tool most frequently used is that of Threat. Smith (1969) points out the necessity of the white middle-class teacher receiving special training, both pre-service and in-service, to learn to work with the disadvantaged and their unique problems.

Although no new instructional axioms were developed as a result of the current study, the rather compelling implications supported by the results is that Content material must be presented in order for it to be acquired and, when Threat behaviors are being manifested, in most cases, cognitive matters are set aside. There is no doubt that discipline is a tremendous problem in classes with a large percentage of minority disadvantaged children; however, the use of Threat, as defined in this study, is not conducive to the higher levels of Content presentation and thus, to academic achievement.

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